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10/758,040	01/16/2004	Sung-kyu Choi	Q78894	6125

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EXAMINER	
LEE, CHRISTOPHER E	
ART UNIT	**PAPER NUMBER**
2112	

DATE MAILED: 02/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/758,040	CHOI, SUNG-KYU	
	Examiner	Art Unit	
	Christopher E. Lee	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Republic of Korea on 18th of January 2003. It is noted, however, that applicant has not filed a certified copy of the 2003-3471 application as required by 35 U.S.C. 119(b).

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Drawings

3. The drawings are objected to because the balloon with editorial comments in the drawings should be removed for clearly showing labels/symbols in the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. The claim 2 recites the subject matter "the processor" in line 3. However, it has not been specifically clarified in the claim 2. Therefore, the Examiner presumes that the term "the processor" could be considered as --a processor-- in light of the specification since it is not defined in the claims.

5. The claim 3 recites the subject matters "the control information" in line 4, and "the request for writing" in line 5. However, they have not been specifically clarified in the claim 3 and their intervening claims, respectively. Therefore, the Examiner presumes that the terms "the control information" could be considered as --a control information--, and "the request for writing" could be considered as --a request for writing-- in light of the specification since they are not defined in the claims.

6. The claims 4 and 10 recite the subject matter "the data" in lines 13, 14, and 16 of the claim 4, and in lines 14, 15, and 17 of the claim 10, respectively. However, it has not been specifically clarified in the respective claims 4 and 10. In other words, the claimed subject matter "the data" is not clear to point out which one of the defined claimed terms "input data," "first data," or "third data." Therefore, the Examiner presumes that the term "the data" could be considered as --the first data-- in lines 13 and 14 of the claim 4, and in lines 14 and 15 of the claim 10, and as --the third data-- in line 16 of the claim 4, and in line 17 of the claim 10, respectively, in light of the specification since it is not clearly pointed out in the claims.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bourke et al. [US 5,509,124 A; hereinafter Bourke].

Referring to claim 1. Bourke discloses a buffering apparatus (i.e., IOIC 10j-m in Fig. 2, standing for Input Output Interface Controller) comprising:

- an asynchronous data bus write unit (i.e., means for processing storage read command in storage operation control 40b2 in Fig. 16) which, when control information (i.e., during control signal ACTIVATE READY being **not asserted**) indicating a request for writing in a buffer (i.e., loading data into registers and buffers 20 of Fig. 2) connected to an asynchronous data bus (i.e., SPD bus 10t-w in Fig. 2) not synchronized with a processor (i.e., instruction processor unit 10a of Fig. 1) is provided by a multiplexer (i.e., adapter interface 14 of Fig. 2A with adapter bus control logic 30 of Fig. 2) connected to the processor (i.e., said instruction processor unit; See col. 17, lines 59-64), receives third data (i.e., data being read from common memory facility 10d in Fig. 1) from the multiplexer (i.e., said adapter interface with adapter bus control logic, in fact said adapter bus delivering said data), stores the third data (i.e., loading said data into said registers and buffers; See col. 17, lines 59-61), and transfers the stored third data to a second memory (i.e., IOBU 10p-s in Fig. 1, standing for Input Output Bus Unit, e.g., serial presence detect (SPD) EEPROM) through the asynchronous data bus (i.e., said SPD bus; See col. 17, lines 61-64); and
- an asynchronous data bus read unit (i.e., means for processing storage write command in storage operation control 40b2 in Fig. 16) which, when control information (i.e., control signal DATA IN END being **asserted**) indicating a request for reading from the buffer (i.e., unloading data from said registers and buffers) is provided by the multiplexer (i.e., said adapter interface with adapter bus control logic; See col. 17, lines 50-59), receives fourth data (i.e., data to be written to said common memory facility) from the second memory (i.e., said IOBU, e.g., SPD EEPROM) through the asynchronous data bus (i.e., said SPD bus; See col. 17, lines 50-54), stores the fourth

data (i.e., loading said data to be written to said common memory facility into said registers and buffers; See col. 17, line 55), and transfers the stored fourth data to the multiplexer (i.e., said adapter interface with adapter bus control logic; See col. 17, lines 55-59).

9. Claims 2 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Barrenscheen et al. [US 2003/0084226 A1; Barrenscheen].

Referring to claim 2, Barrenscheen discloses a processor bus connection method (i.e., a method for data transmission forwarding data; See Abstract and paragraph [0001]) comprising:

- (a) when address information indicating an address of a first memory (i.e., address of Module BU12 in Figs. 2A-B) connected to a synchronous data bus (i.e., BUS1 in Figs. 2A-B) synchronized with a processor (i.e., Module BU11 in Figs. 2A-B), from the processor is received (See paragraph [0035], lines 1-4; actually, data transmission between devices connected to said BUS1 in Fig. 2A), receiving first data from the processor and transferring the received first data to the first memory through the synchronous data bus (See paragraph [0035], lines 11-12; for example, DMA data writing operation from said Module BU11 to said Module BU12 in Fig. 2A), or receiving second data from the first memory through the synchronous data bus and transferring the received second data to the processor (See paragraph [0035], lines 11-12; for example, DMA data reading operation from said Module BU12 to said Module BU11 in Fig. 2A); and
- (b) when address information indicating an address of a second memory (i.e., address of Module BU23 in Figs. 2A-B) connected to an asynchronous data bus (i.e., BUS2 in Figs. 2A-B) not synchronized with the processor (i.e., said Module BU11, which is synchronized with said BUS1, not said BUS2), from the processor is received, receiving third data from the processor, transferring the third data, storing the transferred third data (i.e., data stored in IM Buffer Store in Fig. 4), and transferring the stored third data to the second memory (i.e., said Module BU23)

through the asynchronous data bus (See paragraph [0036]; for example, data writing operation from said Module BU11 to said Module BU23 via bus bridge in Fig. 2B), or receiving fourth data from the second memory through the asynchronous data bus, storing the fourth data, transferring the stored fourth data, receiving the transferred fourth data, and transferring the received fourth data to the processor (See paragraph [0036]; for example, data reading operation from said Module BU23 to said Module BU11 via bus bridge in Fig. 2B).

Referring to claim 3, Barrenscheen teaches (a) comprising

- (a1) when the address information indicating the address of the first memory (i.e., address of Module BU12 in Figs. 2A-B) is provided by the processor (i.e., Module BU11 in Figs. 2A-B) and a control information indicating a request for writing in the first memory is provided by the processor (i.e., DMA data writing operation from said Module BU11 to said Module BU12 in Fig. 2A), receiving the first data from the processor and transferring the received first data to the first memory through the synchronous data bus (See paragraph [0035], lines 1-4 and 11-12; i.e., wherein in fact that the data transmission device DTU as a DMA controller in fact transfers data from the device BU11 to the device BU12 clearly anticipates that a control information indicating a request for writing in the first memory is provided by the processor, receiving the first data from the processor and transferring the received first data to the first memory through the synchronous data bus); and
- (a2) when the address information indicating the address of the first memory (i.e., address of said Module BU12) is provided by the processor (i.e., said Module BU11) and the control information indicating the request for reading from the first memory is provided by the processor (i.e., DMA data reading operation from said Module BU12 to said Module BU11 in Fig. 2A), receiving the second data from the first memory through the synchronous data bus and transferring the received

data to the processor (See paragraph [0035], lines 1-4 and 11-12; i.e., wherein in fact that the data transmission device DTU as a DMA controller can transmit data from one of the devices connected to the bus BUS1 to another of the devices connected to the BUS 1, and said DTU in fact transfers data from the device BU11 to the device BU12, as an example shown in Fig. 2A, clearly anticipates that the control information indicating the request for reading in the first memory is provided by the processor, receiving the second data from the processor and transferring the received data to the processor).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masayuki et al. [JP 2000-92365 A; cited by the Applicant; hereinafter Masayuki] in view of Barrenscheen [US 2003/0084226 A1].

Referring to claim 4, Masayuki discloses a synchronous bus (i.e., CPU bus 34 of Fig. 2) and asynchronous bus (i.e., image data bus 33 of Fig. 2) path method (in fact, a method for preventing congestion in an image data bus to allow each circuit to efficiently conduct signal processing; See Abstract) comprising:

- (a)' receiving input data (i.e., receiving image data from CCD image sensor 11 in Fig. 2) and transferring the received input data through an asynchronous bus (i.e., said image data bus; See paragraph [0017]); and

- (b) receiving the input data through the asynchronous bus (i.e., input process circuit 21 receives said image data from said CCD image sensor) and transferring the received input data (in fact, transferring to memory controller 22 in Fig. 2; See paragraph [0019]).

Masayuki does not teach said receiving input data and transferring the received input data through a synchronous bus synchronized with the processor; generating first data or third data from the transferred input data and transferring the generated first or third data; receiving the first data, transferring the received first data to a first memory through the synchronous data bus, or receiving and storing the third data and transferring the stored third data to a second memory through an asynchronous bus not synchronized with the processor; receiving the first data through the synchronous bus and storing the data; and receiving the third data through the asynchronous bus and storing the data.

Barrenscheen discloses a synchronous bus and asynchronous bus path method (i.e., a method for data transmission forwarding data on a first and second data busses; See Abstract and paragraph [0001]), wherein a data transmission unit (i.e., DTU in Figs. 2A-B) performs the step of

- (a) receiving input data and transferring the received input data through a synchronous bus (i.e., BUS1 in Figs. 2A-B) synchronized with a processor (i.e., synchronized with module BU12 in Figs. 2A-B; See paragraph [0035], lines 1-7);
- (c) generating first data (i.e., data from DTU toward Module BU12 on BUS1 in Fig. 2A) or third data (i.e., data from DTU toward Module BU23 on BUS2 in Fig. 2B) from the transferred input data and transferring the generated first or third data (See paragraphs [0034]-[0036]);
- (d) receiving the first data, transferring the received first data to a first memory (i.e., Module BU12 in Figs. 2A-B) through the synchronous data bus (See Fig. 2A and paragraph [0035], lines 11-12), or receiving and storing the third data (i.e., data stored in IM Buffer Store in Fig. 4) and transferring the stored third data to a second memory (i.e., Module BU23 in Figs. 2A-B) through

an asynchronous bus (i.e., BUS2 in Figs. 2A-B; See paragraph [0036]) not synchronized with the processor (i.e., said Module BU11, which is synchronized with said BUS1, not said BUS2);

- (e) receiving the first data through the synchronous bus and storing the first data (See paragraph [0035] and Fig. 2A, wherein data are transferred via DMA controlling, i.e., received and stored through said BUS1 by DMA transferring operation); and
- (f) receiving the third data through the asynchronous bus and storing the third data (See paragraph [0036] and Fig. 2B, wherein data are transferred via bus bridging, i.e., received and stored via said BUS2 by bus bridge transferring operation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said data transmission unit (i.e., DTU), as disclosed by Barrenscheen, in said path between said synchronous bus (i.e., CPU bus) and said asynchronous bus (i.e., image data bus), as disclosed by Masayuki, for the advantage of providing a way of transmitting large volumes of data quickly and efficiently with a low level of involvement (See Barrenscheen, paragraph [0011]).

Referring to claim 5. Masayuki, as modified by Barrenscheen, teaches

- (g) transferring second data through the synchronous bus (i.e., data transferring through BUS1 in Fig. 2A; See Barrenscheen, paragraph [0035], lines 11-12);
- (h) transferring fourth data through the asynchronous bus (i.e., data transferring through BUS2 in Fig. 2B; See Barrenscheen, paragraph [0036]);
- (i) receiving the second data through the synchronous bus and transferring the received second data (See Barrenscheen, paragraph [0035]), or receiving the fourth data through the asynchronous bus, storing the fourth data (i.e., data being stored in IM Buffer Store in Fig. 4; Barrenscheen), and transferring the stored fourth data (See Barrenscheen, paragraphs [0036] and [0043]);

- (j) generating output data (i.e., OSD image memory 32 generates character image in Fig. 2; Masayuki) from the second data or fourth data (See Masayuki, paragraph [0024]) and transferring the output data (i.e., transferring said generated character image to said memory controller in Fig. 1; Masayuki);
- (k) receiving and storing the output data (i.e., bit map data are stored in said memory controller for controlling) and transferring the stored output data through the asynchronous bus (i.e., transferring said OSD and image data to NTSC/PAL encoder 23 via image data bus 33 for composition in Fig. 2; See Masayuki, paragraph [0024]); and
- (l) receiving the output data through the asynchronous bus (See Masayuki, paragraph [0024]) and outputting the received output data (See Masayuki, paragraphs [0031]-[0033]).

Referring to claim 6. Masayuki teaches

- if the received output data or the received third data is display data (i.e., OSD and/or image data; See paragraph [0024]), the received output data is displayed (i.e., displayed on finder 36 in Fig. 2).

12. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masayuki [JP 2000-92365 A] in view of Barrenscheen [US 2003/0084226 A1] as applied to claims 4-6 above, and further in view of Sodos [US 5,239,651 A].

Referring to claim 7. Masayuki, as modified by Barrenscheen, discloses all the limitations of the claim 7, except that does not expressly teach giving permission on the use of the synchronous bus; and giving permission on the use of the asynchronous bus.

Sodos discloses a method of arbitration for multiple requested data transfers (See Abstract), wherein

- (m) giving permission (i.e., bus grant) on the use of a synchronous bus (e.g., Internal Busses 240 of Fig. 2); and
- (n) giving permission (i.e., bus grant) on the use of an asynchronous bus (e.g., External Busses 230 of Fig. 2; See col. 5, lines 3-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included said method of arbitration for multiple requested data transfers, as disclosed by Sodos, in said method for said synchronous and asynchronous busses path, as disclosed by Masayuki, as modified by Barrenscheen, for the advantage of providing an efficient resource utilization for a resource handling multiple time multiplexing data transfer operations (See Sodos, col. 2, lines 26-32).

Referring to claim 8. Masayuki, as modified by Barrenscheen and Sodos, teaches

- in (a) and (b), the received input data is transferred through the synchronous bus and the input data is received through the synchronous bus (i.e., data being transferred through BUS1 in Figs. 2A-B; Barrenscheen) for which permission to use is given in (m) (i.e., said BUS1 is granted to transfer said data; See Sodos, col. 5, lines 3-33);
- in (d), the received first data is transferred to the first memory (i.e., data being transferred to Module BU12 in Figs. 2A-B; Barrenscheen) through the synchronous data bus and the first data is received through the synchronous bus and stored (i.e., transferred to said Module BU12; See Barrenscheen, Fig. 2A and paragraph [0035], lines 11-12) for which permission to use is given in (m) (i.e., said Module BU12 is granted to transfer said data; See Sodos, col. 5, lines 3-33), or the stored third data (i.e., data stored in IM Buffer Store in Fig. 4; Barrenscheen) is transferred to a second memory (i.e., data being transferred to Module BU23 in Figs. 2A-B; Barrenscheen) through the asynchronous bus (i.e., BUS2 in Figs. 2A-B; See Barrenscheen, paragraph [0036]) for

which permission to use is given in (n) (i.e., said BUS2 is granted to transfer said data; See Sodos, col. 5, lines 3-33);

- in (f), the third data is received through the asynchronous bus (i.e., BUS2 in Figs. 2A-B; See Barrenscheen, paragraph [0036] and Fig. 2B) for which permission to use is given in (n) (i.e., said BUS2 is granted to transfer said data; See Sodos, col. 5, lines 3-33) and stored (in fact, data are transferred via bus bridging, i.e., received and stored via said BUS2 by bus bridge transferring operation; Barrenscheen).

Referring to claim 9. Masayuki, as modified by Barrenscheen and Sodos, teaches

- in (g), the second data is transferred through the synchronous bus (i.e., data transferring through BUS1 in Fig. 2A; See Barrenscheen, paragraph [0035], lines 11-12) for which permission to use is given in (m) (i.e., said BUS1 is granted to transfer said data; See Sodos, col. 5, lines 3-33);
- in (h), the fourth data is transferred through the asynchronous bus (i.e., data transferring through BUS2 in Fig. 2B; See Barrenscheen, paragraph [0036]) for which permission to use is given in (n) (i.e., said BUS2 is granted to transfer said data; See Sodos, col. 5, lines 3-33);
- in (i), the second data is received through the synchronous bus (i.e., said BUS1) for which permission to use is given in (m) (i.e., said BUS1 is granted to transfer said data; See Sodos, col. 5, lines 3-33) and the received second data is transferred (See Barrenscheen, paragraph [0035]), or the fourth data is received through the asynchronous bus for which permission to use is given in (n) (i.e., said BUS2 is granted to transfer said data; See Sodos, col. 5, lines 3-33), stored (i.e., data being stored in IM Buffer Store in Fig. 4; Barrenscheen), and the stored fourth data is transferred (See Barrenscheen, paragraphs [0036] and [0043]);
- in (k) the output data (i.e., bit map data are stored in said memory controller for controlling; Masayuki) is received and stored, and the stored output data is transferred through the

asynchronous bus (i.e., transferring said OSD and image data to NTSC/PAL encoder 23 via image data bus 33 for composition in Fig. 2; See Masayuki, paragraph [0024]) for which permission to use is given in (n) (i.e., said image data bus is granted to transfer said data; See Sodos, col. 5, lines 3-33); and

- in (l), the output data is received through the asynchronous bus (See Masayuki, paragraph [0024]) and the received output data is output to a user (i.e., user of digital still camera in Fig. 2; See Masayuki, paragraphs [0031]-[0033]) for which permission to use is given in (n) (i.e., said image data bus is granted to transfer said data; See Sodos, col. 5, lines 3-33) and the received third data is output (i.e., displaying on finder 36 of Fig. 2; Masayuki).

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masayuki [JP 2000-92365 A] in view of Barrenscheen [US 2003/0084226 A1] and what was well known in the art, as exemplified by Luo et al. [US 6,265,885 B1; hereinafter Luo].

Referring to claim 10, all of the claim limitations have already been discussed/addressed with respect to claim 4, with the exception of a computer readable recording medium including a computer program having instructions for controlling a synchronous bus and asynchronous bus, the instructions comprising the steps of the method in the claim 4 (e.g., implementing in a computer software program).

The Examiner takes Official Notice that said method in the claim 4 being implemented in a computer program having instructions for controlling said synchronous bus and asynchronous bus (i.e., a computer software program), and being stored in a computer readable recording medium (i.e., memory), is well known to one of ordinary skill in the art, as evidenced by Luo (See Claim 9, lines 2-4).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have implemented said method of the claim 4 in said computer program having said instructions (i.e., a computer software program), and being stored in said computer readable recording medium (i.e.,

memory) since it would have provided a better flexibility of implementing said method than a hardware implementation, such as an easy modification, etc.

However, the recitation in the claim 10, that "a computer readable recording medium including a computer program" has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *See Kropa v. Robie, 88 USPQ 478 (CCPA 1951).*

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Piirainen [US 6,075,830 A] discloses method and apparatus for adapting an asynchronous bus to a synchronous circuit.

Arimilli et al. [US 5,287,457 A] disclose computer system DMA transfer.

Bredin et al. [US 6,286,072 B1] disclose system and method for synchronizing data communication between asynchronous buses.

Yoshida et al. [US 4,958,271] disclose transfer control equipment.

Appiano et al. [US 4,639,861] disclose interface controlling bidirectional data transfer between a synchronous and an asynchronous bus.

Hofmann et al. [US 6,633,994 B1] disclose method and system for optimizing data transfers between devices interconnected by buses operating at different clocking speeds.

Murphy et al. [US 5,265,216 A] disclose high performance asynchronous bus interface.

Takeda [US 6,088,743 A] discloses processor receiving response request corresponding to access clock signal with buffer for external transfer synchronous to response request and internal transfer synchronous to operational clock.

Normoyle et al. [US 6,553,435 B1] disclose DMA transfer method for a system including a single-chip processor with a processing core and a device interface in different clock domains.

Ohnishi [US 5,572,676 A] discloses network I/O device having FIFO for synchronous and asynchronous operation.

Katsura et al. [US 6,429,871 B1] disclose graphic processing method and system for displaying a combination of images.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher E. Lee whose telephone number is 571-272-3637. The examiner can normally be reached on 9:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher E. Lee
Examiner
Art Unit 2112

CEL/